



## Editorial - International journal of sustainable energy planning and management vol 17

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*Published in:*

International Journal of Sustainable Energy Planning and Management

*DOI (link to publication from Publisher):*

[10.5278/ijsepm.2018.17.1](https://doi.org/10.5278/ijsepm.2018.17.1)

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*Publication date:*

2018

*Document Version*

Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

*Citation for published version (APA):*

Østergaard, P. A. (2018). Editorial - International journal of sustainable energy planning and management vol 17. *International Journal of Sustainable Energy Planning and Management*, 17, 1-2.  
<https://doi.org/10.5278/ijsepm.2018.17.1>

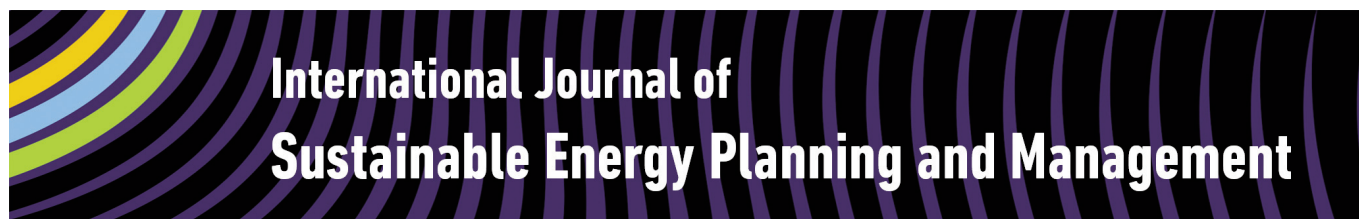
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## Editorial - International Journal of Sustainable Energy Planning and Management Vol 17

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### ABSTRACT

This editorial introduces the 17<sup>th</sup> volume of the International Journal of Sustainable Energy Planning and Management. The volume present work on photo voltaic systems for decentralised applications and country studies of both Ghana, Kenya & South Africa and of Rwanda. Finally, methodology development papers on decision-making and biomass resource estimation round off the volume.

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### Keywords:

Photo voltaic systems;  
Country studies;  
Decision-making;  
Biomass estimation;

URL:  
[dx.doi.org/10.5278/ijsepm.2018.17.1](https://doi.org/10.5278/ijsepm.2018.17.1)

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### *1. Photo voltaic systems and system impacts*

Kozarcanin & Andresen [1] combine analyses of photo voltaic (PV) installations with analyses of electric power grids in small-scale systems. Based on two cases in Vaxjö, Sweden, they find that it is not required to add active smart grid control even when installing sufficient PV capacity to meet annual electricity demands eightfold. They do not reveal problems with overvoltage which would be the case with the same capacity on individual houses. For the combined installation on residential buildings, imbalances are shared on the medium voltage grid where impacts are smaller than on the low-voltage grid

Tomc & Vasallo [2] also investigate photo voltaic systems in apartment buildings, here with a focus on community renewable energy networks; a topic they have also addressed in previous work [3,4]. Combining loads and productions from multiple residents and having a communal battery decreases the

likelihood that demands have to be met by external sources as the total of individual imbalances exceeds the total of individual imbalances when coordinated in an integrated manner.

### *2. Country studies*

Kwakwa et al. [5] analyse links between energy consumption and urbanization rates, economic growth and more using statistical evidence from the period 1975 to 2013 for Ghana, Kenya and South Africa. They find a number of factors affecting demands positively and negatively and also factors that have different impact on the three case countries with income and urbanization consistently being factors driving up energy demands. With positive links to energy consumption, detaching economic growth from energy usage through improved efficiency becomes important. The analyses also indicate e.g. the sensitivity of the Kenyan energy system to energy prices

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Rwanda is a country of ample hydropower resources, however while the resource is climate change favourable, climate change is not favourable for hydropower in Rwanda. Combined with both population and economic growth, Rwanda is thus facing the potential prospect of heading towards a more fossil-dependent energy system. Uhorakeye & Möller[6] therefore investigate alternative pathways using locally available renewable energy sources in a Rwandan setting.

### 3. Methods for energy planning

In [7] Saleki investigate a decision-making method for designing energy supply systems in Teheran. Using a four-step method, involving technical deliberation, system design choice preference and cost-based ranking, Saleki find that focus should be put on photo voltaics and wind power in Teheran for the energy supply of individual houses.

Acknowledging the important role of biomass in future renewable energy-based energy systems, better methods are required for the assessment of available biomass resources. Based on this presupposition, Torre-Tojal et al.[8] estimate biomass availability for energy production based on Light Detection and Ranging (LiDAR) flights.

### Acknowledgements

The International Journal of Sustainable Energy Planning and Management appreciates the contributions from the reviewers that have assisted the authors in improving their work.

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